HW Switches

In basic black or stylish metal, the HW series of 22mm switches from IDEC are available in several styles to dress up any panel. HW pushbuttons and pilot devices are internationally-rated, designed for use almost anywhere in the world, and have removable contact blocks, finger-safe terminals, and tamperproof construction. Choose simple black plastic bezels for clean uniformity or the new chrome-plated metallic bezels for a rugged industrial look.

PS5R Slim Line Power Supplies

IDEC PS5R Slim Line power supplies have all the features, all the power, and only half the size of traditional power supplies. Save valuable DIN Rail space with the 30W, 60W, 90W, 120W, or 240W models which can fit any of your power needs. The PS5R Slim Line models are UL508 and UL1604 listed for hazardous locations. The 30W and 60W models are also NEC Class 2 rated. The 120W and 240W models comply with SEMI F47 sag immunity requirements.

IDEC E-Stop Switches

Simply Safe

Smart Products. Simple Solutions.

IDEC Corporation
1175 Elko Drive
Sunnyvale, CA 94089-2209, USA
Tel (408) 747-0550
Toll Free (800) 262-IDEC
Fax (408) 744-9055
Toll Free Fax (800) 635-6246
Email: opencontact@idec.com

IDEC Australia Pty. Ltd.
2/3 Macro Court
Rowville, Victoria 3178, Australia
Tel +61-3-9763-3244
Toll Free (1800) 68-IDEC
Fax +61-3-9763-3255
Email: sales@au.idec.com

IDEC Electronics Ltd.
Unit 2 Beechwood
Chineham Business Park
Basingstoke
Hampshire RG24 8WA, United Kingdom
Tel +44 (0) 1256-321000
Fax +44 (0) 1256-327755
Email: sales@uk.idec.com

IDEC IZUMI (H.K.) Co., Ltd.
Unit 1505-1507, DCH Commercial Centre
No. 25 Westlands Road
Quarry Bay, Hong Kong
Tel +852-2803-8989
Fax +852-2565-0171
Email: info@hk.idec.com

IDEC Taiwan Corporation
8F-1, No.79, Hsin Tai Wu Road, Sec. 1
Hsi-Chih, Taipei County, Taiwan
Tel +886-2-2698-3929
Fax +886-2-2698-3931
Email: service@idectwn.com.tw

IDEC Canada Ltd.
Unit 22-151 Brunel Road
Mississauga, Ontario, L4Z 1X3, Canada
Tel (905) 890-8561
Toll Free (888) 317-IDEC
Fax (905) 890-8562
Email: sales@ca.idec.com

IDEC IZUMI Corporation
7-31, Nishi-Miyahara
1-Chome, Yodogawa-ku
Osaka 532-8550, Japan
Tel +81-6-6398-2571
Fax +81-6-6392-9731

IDEC Elektrotechnik GmbH
Wendenstraße 331
D-20537 Hamburg, Germany
Tel +49-40-2530540
Fax +49-40-25305424
Email: service@idec.de

IDEC IZUMI Asia Pte. Ltd.
No. 31, Tannery Lane #05-01
Dragon Land Building,
Singapore 347788
Tel +65-6746-1155
Fax +65-6844-5995
Email: generalinfo@idecasia.com.sg

IDEC IZUMI (Shanghai) Co., Ltd.
Room E, 15F, Majesty Building
No. 138 Pudong Avenue
Shanghai 200120, P.R.C.
Tel +86-21-5887-9181
Fax +86-21-5887-8930
Email: idec@cn.idec.com

www.idec.com

Catalog No. XW9Y-B100-1 *09/04 15K*

Smart Products. Simple Solutions.

idec

Safest Emergency Stop Switches in the World!

The emergency stop button is a critical component on any machine because its failure can have severe implications. A malfunction can cause equipment damage, personal injury, down time, etc., and may even lead to catastrophic failures like fires and life-threatening accidents. Malfunctions caused by dislocation of the contact blocks can occur due to improper installation of the switch, accidental removal of the contact block, improper wiring, and even from vibration during the transportation of a finished product.

To reduce the risk of potential disaster, IDEC has designed the XA/XW series E-Stop switches. They reduce the impact of these failures, and not only comply with recent international safety standards (ISO13850 and EN60947-5-5), but actually exceed the safety standards by automatically turning off when a part fails or the contact block and the actuator are improperly installed. By surpassing the current international standards, the XA/XW E-Stops have become the world's safest switches.

IDEC has manufactured a variety of other innovative, high quality Emergency Stop switches for the last 50 years. For example, to eliminate the problem of contact "borrowing" the unique HW 22mm Unibody E-Stop has no removable contacts. Another example is the compact HA1E 16mm E-Stop, which is the shortest behind-the-panel E-Stop to comply with the Direct Contact Opening directive (IEC60947-5-1, -5). IDEC is consistently leading the market in new technology and innovation for machine operator safety.

Safety

The emergency stop button is a critical component on any machine because its failure has the potential to cause severe injury or loss of life. To reduce the risk of potential disaster, IDEC has designed the XA/XW series E-Stops. The XA/XW Emergency Stop switches surpass the requirements of current international standards making them the world's safest switches!

Innovation

The XA/XW series of E-Stops utilize a revolutionary "safe break action" design that forcefully opens the NC contacts, even if they are welded, and stops the machine. This one-of-a-kind design reverses the energy direction and actually uses the spring-pressure to ensure that the NC contacts will open if the emergency switch is damaged or the contact blocks break off due to excessive force.

Variety

As a global leader of switches, IDEC manufactures a large selection of E-Stops for a variety of applications. If you need a compact rugged E-Stop or an E-Stop Station, there is a wide range of sizes and designs available. With additional choices from Illuminated Push-Pull to the Push Lock–Key Reset, PCB Terminals to Screw Terminals, IDEC has just the right E-Stop for you.

Revolutionary "Safe Break Action" Design

The two new IDEC Emergency Stop switches, the XA & XW series, include revolutionary new technology that will change the way E-Stop switches are designed. This "safe break action" concept provides greater levels of human safety and is the first of its kind in the world!

Conventional E-Stop switches are designed with spring pressure on the Normally Closed (NC) contacts, keeping them in the closed position and allowing the machine to operate. Improper installation or excessive force to the stop button in an emergency may break or dislodge a vital part, causing the spring loaded contact to stay closed. This situation renders the E-Stop incapable of stopping the machine, and can lead to catastrophic events, personal injury and possible loss of life.

This one-of-a-kind "safe break action" design, found only in the IDEC XA & XW series, reverses the energy direction and uses the spring-pressure to assure that the NC contacts will open if the emergency switch is damaged or the contact blocks separate due to excessive force. The NC contacts will reliably open, even if they are welded, and stop the machine. Combined with IDEC quality, this is the E-Stop switch you want in a life threatening situation.

Both the XA and XW switches include up to four contacts in a very compact package. In today's automated world, more customers are requiring E-Stop switches with at least three contacts. (Two of the contacts trip the power and the third contact is used to alert a safety-monitoring relay.) Both the XA and XW series switches offer up to four "safe-break" contacts with a depth behind the panel that is half the size of conventional E-Stop switches. This means that there is an additional contact available and the **switches can be used in Level 4 safety category applications**.

IDEC's new E-Stop switches are secured from the rear of the control panel so that the E-Stop cannot be removed from the front. Another unique feature of the XA & XW E-Stop switches is that either a push-turn or push-pull reset method can be used to reset the switches. This eliminates any possible confusion for operators when resetting the switch. The durability and quality of these new E-Stop switches make them extremely reliable. They can withstand the increased high stress caused by panic or a reaction to an emergency situation.

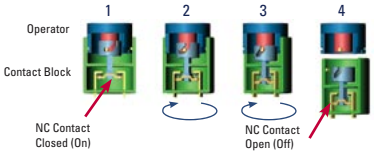
When Safety Matters. . . Reach for the World's Safest E-Stop

XA & XW Series, The Safe Break Action E-Stops!

Reach for the "Safe Break Action"

When the contact block is removed from the operator the main contact (NC) is forced to open (OFF). When removing the contact block, the cam provides a direct opening action to open the contact.

Internal view while removing the contact block



Important Safety Information

XA/XW E-Stops have lower internal energy in the "Locked" (Latching) position than in the "Normal" (Reset) position. When the switch is damaged from an excessive shock, the main contact (NC) moves toward the OFF (Safe) position.

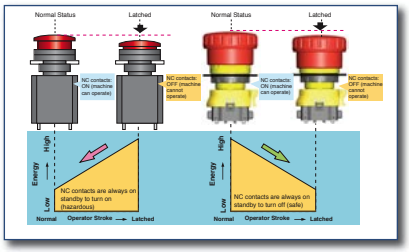
Direct Opening Action

Even if the contacts are welded, the force applied on the button directly opens the contact.

Rated Insulation Voltage: 250V minimum
Rated Thermal Current: 2.5A minimum

Safety Interlock Mechanism

Contacts are opened when the operator is locked, and remain opened until the operator is unlocked intentionally. (IEC60947-5; 6:2)



Two E-Stops in One

Pushlock Pull or Turn Reset

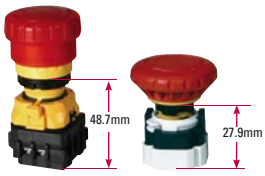
The XA/XW E-Stops can be reset either by pulling or turning the button. This ensures that the reset action will always be different from the make action. With traditional E-Stops, you need to choose between Push-Pull or Pushlock Turn Reset. With the IDEC XA/XW E-Stops you get both in one switch.

Pull Reset

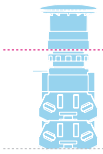
Turn Reset

Compact

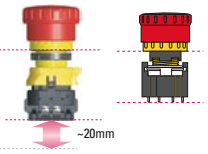
Compact Body with Four Contacts



Traditional E-Stop



22mm XW and 16mm XA Series



- Lead-free
- The depth behind the panel is only 48.7mm for 4 contacts (XW Series)
- IDEC's original "Safe Break Action" ensures the contacts open if the contact block is separated from the operator
- Pushlock Reset and Push-Pull
- Direct opening action mechanism (IEC60947-5-5, 5.2, IEC60947-5-1, Annex K)
- Safety lock mechanism (IEC60947-5-5, 6.2)
- Degree of protection IP65 (IEC60529)
- Screw terminal is finger-safe (IP20)
- Two button sizes: 40mm and 60mm (XW Series)
- Rated Insulation Voltage - 16mm 300V, 22mm 250V
- Rated Thermal Current 5A
- UL, c-UL approved. EN compliant

XA 16mm E-Stops

XA 16mm 40mm Mushroom Button with PCB Terminals

NO Contacts	NC Contacts	Part Numbers
1	1	XA1E-BV411V-R
–	2	XA1E-BV402V-R
1	3	XA1E-BV413V-R
–	4	XA1E-BV404V-R

XA 16mm 40mm Mushroom Button with Solder Terminals

NO Contacts	NC Contacts	Part Numbers
1	1	XA1E-BV411-R
–	2	XA1E-BV402-R
1	3	XA1E-BV413-R
–	4	XA1E-BV404-R

XW 22mm E-Stops

XW 22mm LED Illuminated* 40mm Mushroom Button with Screw Terminals

NO Contacts	NC Contacts	Part Numbers
1	1	XW1E-LV411Q4M-R
–	2	XW1E-LV402Q4M-R
1	3	XW1E-LV413Q4M-R
–	4	XW1E-LV404Q4M-R

* Illumination is with built-in 24V AC/DC LED

XW 22mm 40mm Mushroom Button with Screw Terminals

NO Contacts	NC Contacts	Part Numbers
1	1	XW1E-BV411M-R
–	2	XW1E-BV402M-R
1	3	XW1E-BV413M-R
–	4	XW1E-BV404M-R

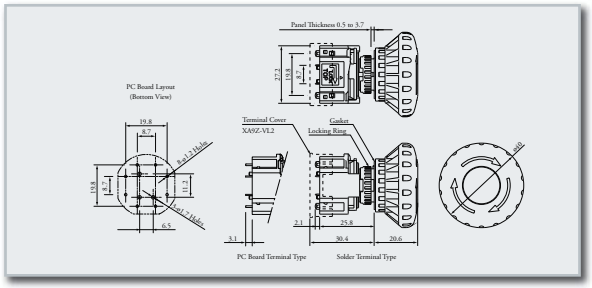
XW 22mm Jumbo E-Stops

XW 22mm 60mm Jumbo Mushroom Button with Screw Terminals

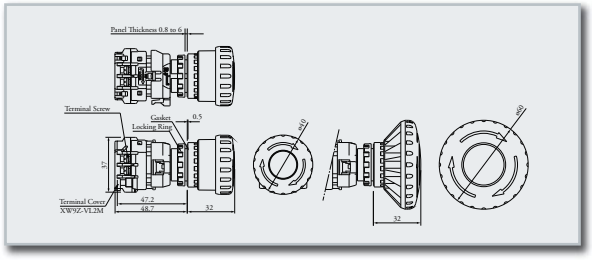
NO Contacts	NC Contacts	Part Numbers
1	1	XW1E-BV511M-R
–	2	XW1E-BV502M-R
1	3	XW1E-BV513M-R
–	4	XW1E-BV504M-R

XA and XW Dimensions

XA



XW



IDEC also offers a wide range of traditional E-Stops. You can count on IDEC to maintain the highest quality and innovation in creating the best E-Stops available. There are a large number of sizes, applications, locking mechanisms, releases, designs and illumination choices. Without a doubt, IDEC has the right E-Stop for you.

IDEC Innovations and Technologies:

- Direct Contact Opening
  (IEC60947-5-5, IEC60947-5-1 Annex K)
  This positive action design ensures that the machine operator will absolutely be able to shut off the machine. Even if the contacts are welded, the force applied on the button directly opens the contact.
- Safety Interlock Mechanism
  (IEC60947-5-5, EN418, ISO13850)
  IDEC Emergency stop switches are "fool-proof" or "tease-proof," meaning that the switch, when intended to be activated, will latch and will continue to remain latched until manually reset. Normally closed (NC) contacts are opened when the operator is locked, and will remain open until the operator is unlocked intentionally.
- Unibody Version
  An innovative design for E-Stops. The Unibody models are made with fixed contacts within single molded units that make it impossible for someone to "borrow" contacts from the E-Stop.

HA 16mm E-Stop

**HA 16mm Pushlock Turn Reset
29mm Mushroom**

Contacts	Plastic Bezel
2NC Solder Terminals	HA1B-V2E2R
2NC PCB Terminals	HA1B-V2E2VR
1NC Short Body Solder Terminals	HA1E-V2S1R
2NC Short Body Solder Terminals	HA1E-V2S2R

HW 22mm & HN 30mm Unibody E-Stops

**HW 22mm Unibody Pushlock Turn Reset
40mm Mushroom**

Contacts	Plastic Bezel
1NO-1NC	HW1E-BV4F11-R
2NC	HW1E-BV4F02-R

**HW 22mm Illuminated Unibody Pushlock Turn Reset
40mm Mushroom (24V AC/DC)**

Contacts	Plastic Bezel
1NO-1NC (INC)	HW1E-LV4F11Q-R-24V
2NC (INC)	HW1E-LV4F02Q-R-24V
1NO-INC (LED)	HW1E-LV4F11QD-R-24V
2NC (LED)	HW1E-LV4F02QD-R-24V

**HN 30mm Unibody Pushlock Turn Reset
40mm Mushroom**

Contacts	Plastic Bezel
1NO-1NC	HN1E-BV4F11-R
2NC	HN1E-BV4F02-R

**HN 30mm Illuminated Unibody Pushlock Turn Reset
40mm Mushroom (24V AC/DC)**

Contacts	Plastic Bezel
1NO-1NC (INC)	HN1E-LV4F11Q-R-24V
2NC (INC)	HN1E-BV4F02Q-R-24V
1NO-1NC (LED)	HN1E-LV4F11QD-R-24V
2NC (LED)	HN1E-BV4F02QD-R-24V

TW 22mm E-Stops 40mm Mushrooms

TW 22mm Pushlock Turn Reset

Contacts	Part Number
1NO	AVW410-R
1NC	AVW401-R
1NO-1NC	AVW411-R
2NC	AVW402-R

TW 22mm Push-Pull

Contacts	Part Number
1NO	AYW410-R
1NC	AYW401-R
1NO-1NC	AYW411-R
2NC	AYW402-R

**TW 22mm Illuminated Pushlock Turn Reset
(24V AC/DC)**

Contacts	Part Number
1NO-1NC (INC)	AVLW49911-R-24V
2NC (INC)	AVLW49902-R-24V
1NO-1NC (LED)	AVLW49911D-R-24V
2NC (LED)	AVLW49902D-R-24V

**TW 22mm Illuminated Push-Pull
(24V AC/DC)**

Contacts	Part Number
1NO-1NC (INC)	AYLW49911-R-24V
2NC (INC)	AYLW49902-R-24V
1NO-1NC (LED)	AYLW49911D-R-24V
2NC (LED)	AYLW49902D-R-24V

TWTD 30mm E-Stops 40mm Mushrooms

TWTD 30mm Pushlock Turn Reset

Contacts	Part Number
1NO	AVD310N-R
1NC	AVD301N-R
1NO-1NC	AVD311N-R
2NC	AVD302N-R

TWTD 30mm Push-Pull

Contacts	Part Number
1NO	AYD310N-R
1NC	AYD301N-R
1NO-1NC	AYD311N-R
2NC	AYD302N-R

**TWTD 30mm Illuminated Pushlock Turn Reset
(24V AC/DC)**

Contacts	Part Number
1NO-1NC (INC)	AVLD39911N-R-24V
2NC (INC)	AVLD39902N-R-24V
1NO-1NC (LED)	AVLD39911DN-R-24V
2NC (LED)	AVLD39902DN-R-24V

**TWTD 30mm Illuminated Push-Pull
(24V AC/DC)**

Contacts	Part Number
1NO-1NC (INC)	AYLD39911N-R-24V
2NC (INC)	AYLD39902N-R-24V
1NO-1NC (LED)	AYLD39911DN-R-24V
2NC (LED)	AYLD39902DN-R-24V

HW 40mm E-Stop Station

HW Series E-Stop Station

Style	Contact	Plastic Bezel	Metal Bezel
40mm Pushlock Turn Reset	1NO-1NC	HW1X-BV411-R	HW4X-BV411-R
	2NC	HW1X-BV402-R	HW4X-BV402-R
40mm Push-Pull Reset	1NO-1NC	HW1X-BY411-R	HW4X-BY411-R
	2NC	HW1X-BY402-R	HW4X-BY402-R
40mm Pushlock Key Reset	1NO-1NC	HW1X-BX411-R	HW4X-BX411-R
	2NC	HW1X-BX402-R	HW4X-BX402-R

IDEC Traditional E-Stops and Accessories

HW 22mm E-Stops

HW 22mm Pushlock Turn Reset
40mm Mushroom

Contacts	Plastic Bezel	Metal Bezel
1NO	HW1B-V4F10-R	HW4B-V4F10-R
1NC	HW1B-V4F01-R	HW4B-V4F01-R
1NO-1NC	HW1B-V4F11-R	HW4B-V4F11-R
2NC	HW1B-V4F02-R	HW4B-V4F02-R

HW 22mm Pushlock Key Reset
40mm Mushroom

Contacts	Plastic Bezel	Metal Bezel
1NO	HW1B-X4F10-R	HW4B-X4F10-R
1NC	HW1B-X4F01-R	HW4B-X4F01-R
1NO-1NC	HW1B-X4F11-R	HW4B-X4F11-R
2NC	HW1B-X4F02-R	HW4B-X4F02-R

HW 22mm Push-Pull 40mm Mushroom

Contacts	Plastic Bezel	Metal Bezel
1NO	HW1B-Y2F10-R	HW4B-Y2F10-R
1NC	HW1B-Y2F01-R	HW4B-Y2F01-R
1NO-1NC	HW1B-Y2F11-R	HW4B-Y2F11-R
2NC	HW1B-Y2F02-R	HW4B-Y2F02-R

HW 22mm EMO Pushlock Turn Reset
40mm Mushroom

Contacts	Plastic Bezel	Metal Bezel
1NO	HW1B-V4F10-R-EMO-2	HW4B-V4F10-R-EMO-2
1NC	HW1B-V4F01-R-EMO-2	HW4B-V4F01-R-EMO-2
1NO-1NC	HW1B-V4F11-R-EMO-2	HW4B-V4F11-R-EMO-2
2NC	HW1B-V4F02-R-EMO-2	HW4B-V4F02-R-EMO-2

HW 22mm Pushlock Turn Reset
40mm Yellow Mushroom*

Contacts	Plastic Bezel	Metal Bezel
1NO	HW1B-V4F10-Y	HW4B-V4F10-Y
1NC	HW1B-V4F01-Y	HW4B-V4F01-Y
1NO-1NC	HW1B-V4F11-Y	HW4B-V4F11-Y
2NC	HW1B-V4F02-Y	HW4B-V4F02-Y

* Yellow button should not be used as an emergency stop switch

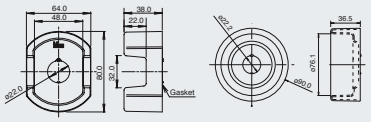
HW 22mm Pushlock Turn Reset
60mm Jumbo Mushroom

Contacts	Plastic Bezel
1NO	HW1B-V5F10-R
1NC	HW1B-V5F01-R
1NO-1NC	HW1B-V5F11-R
2NC	HW1B-V5F02-R

E-Stop Accessories

E-Stop Shrouds

	Part Number
A	HW9Z-KG1-TK2120
B	HW9Z-KG2-TK2120



E-Stop Nameplates

Size and Style	Part Number	ID	OD
16mm Blank ø60mm	HAAV4-0	16mm	60mm
16mm "Emergency Stop" ø60mm	HAAV4-27	16mm	60mm
22mm Blank ø60mm	HWAV-0	22mm	60mm
22mm "Emergency Stop" ø60mm	HWAV-27	22mm	60mm
22mm "Emergency Stop" ø80mm For Jumbo Mushroom	HWAV5-27	22mm	80mm

XA & XW Technical Information

Specifications	XA	XW
Conforming to Standards	IEC60947-5-1, EN60947-5-1, IEC60947-5-5, EN60947-5-5, JIS C8201-5-1, UL508, CSA C22.2 No.14	
Standard Operating Condition	Operating Temperature: Non-illuminated -25 to +60˚C Without Freezing Illuminated -25 to +55˚C Without Freezing Operating Humidity: 45 to 85%RH Without Condensing Storage Temperature: 45 to +80˚C	
Operating Force	Pushlock: 10.5N Pull Reset: 10N Turn Reset: 0.16N-m	Pushlock: 32N Pull Reset: 21N Turn Reset: 0.27N-m
Minimum Force to Latch	60N	80N
Maximum Travel to Latch	4.0mm	
Maximum Travel	4.5mm	
Shock Resistance	Operating Extremes: 150m/s^2 (15G) Damage Limits: 1000m/s^2 (100 G)	
Vibration Resistance	10 to 500Hz, Amplitude 0.35mm Acceleration 50m/s^2 (5G) 10 to 500Hz, Amplitude 0.35mm Acceleration 50m/s^2 (5G)	
Life	Mechanical: 250,000 Minimum Electrical: 100,000 Minimum 250,000 or more (24V AC/DC 100mA)	
Degree of Protection	IP65 (IEC60529)	
Short-Circuit Protection	250V/10A Fuse (Type aM IEC60269-1/IEC60269-2)	
Terminal Shape	Solder Terminal PCB Terminal	M3 Screw Terminal
Applicable Wire Size	Solder/PCB Terminal: 1.25mm^2 Maximum (AWG 16 Maximum)	Screw Terminal: 0.75 to 1.25mm^2 (AWG 18 to 16)
Soldering	20W/5sec Maximum 260°c/3sec Maximum	—
Recommended Terminal Torque	—	0.6 to 1.0N-m
Weight (Approx.)	40mm Button: 28 grams	40mm Button: 72 grams 60mm Button: 81 grams

Connection Diagrams and Panel Cutouts